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| 09/926,193 | 09/21/2001 | Hiroyuki Atarashi | 214072US2PCT | 4538 |
| 22850 | 7590 | 08/22/2005 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | WONG, WARNER | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2661 | |

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/926,193

Applicant(s)

ATARASHI ET AL.

Examiner

Warner Wong

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7, 15, 16, 18 is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-15, 17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 24 March 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Specification

Claim Objections

1. (Amended) claims 15-17 are objected to because of the following informalities:
There exists an original claim 15. Claims 15-17 will be renumbered to claims 16-18 respectively and the new numbering scheme will be used for this examination.
2. Claim 6 is objected to because of the following informalities: The phrase "common signal" is ambiguous. It is assumed from the original unamended claim 6 that it is referring to the "common pilot signal". Appropriate correction is required.
3. Claim 16 is objected to because of the following informalities: The phrase "common signal" is ambiguous. It is assumed as in the original unamended claim 6 referencing claim 5 that it is referring to the "common pilot signal". Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1-3, 8, 9, 10-11 and 17 is rejected under 35 U.S.C. 102(a) as being anticipated by Yukiko (2000-201134).

Regarding claims 1 and 8, Yukiko ('134) describes a (downlink) channel method, inherent that it is generated by a base station, with m subcarriers (paragraph 11) using Orthogonal Frequency Division Multiplexing (OFDM) (since using FFT/IFFT and multicarriers) and time multiplexing (paragraph 27) for insertion of common control channel and common pilot channels to all or part of n subcarriers (paragraphs 27-29, drawing 5).

Regarding claim 2, Yukiko ('134) describes a method with segmented time frames/intervals in subcarriers (paragraph 28), selecting all (predetermined number) subcarriers and periodically inserting the common control channel signal and common pilot signal into every time frame (paragraph 29, drawing 5).

Regarding claim 3, Yukiko ('134) describes a method where the insertion of the common pilot signals is at the same timing in every subcarrier within a timeframe (paragraph 29).

Regarding claim 9, Yukiko ('134) describes a (downlink) channel method (inherently created by a base station) with segmented time frames/intervals in subcarriers (paragraph 28), selecting all (predetermined number) subcarriers and

periodically inserting the common control channel signal into every time frame (paragraph 29, drawing 5).

4. Regarding claim 10, Yukiko ('134) describes a (downlink) channel method (inherently created by a base station) with segmented time frames/intervals in subcarriers (paragraph 28), selecting all (predetermined number) subcarriers and periodically inserting the common pilot signal into every time frame (paragraph 29, drawing 5).

5. Regarding claim 11, Yukiko ('134) describes a method (inherently created by a base station) of selecting all (predetermined number) subcarriers and periodically inserting the common pilot signal into every time frame (paragraph 29, drawing 5), where the insertion of the common pilot signal is at the same timing of the common control channel (signal) in every subcarrier within a timeframe (drawing 29).

6. Regarding claim 17, Yukiko ('134) describes a (downlink) channel method (inherently created by a base station) with segmented time frames/intervals in subcarriers (paragraph 28), selecting all (predetermined number) subcarriers and periodically inserting the common pilot signal into every time frame (paragraph 29, drawing 5).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7 10. Claims 4, 6, 7, 12, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yukiko ('134) in view of Wallace (6,473,467).

11. Regarding claims 4 and 12, Yukiko ('134) describes a (downlink) channel method (inherently created by a base station) with segmented time frames/intervals in subcarriers (paragraph 24), selecting all (predetermined number) subcarriers and periodically inserting the common pilot signal into every time frame (paragraph 26, drawing 1).

Yukiko ('134) fails to describe a continuous common control channel in a predetermined number of subcarriers.

Wallace ('467) exemplifies a downlink by a base station with segmented time frame of 9 timeslots and 16 OFDM subchannels/subcarriers (figure 2) where dedicated (continuous inserted) common control subchannels of control channel 1 and broadcast channel 2 (col. 10, lines 58-63).

It would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the method of Yukiko ('134) to specify the insertion of the continuous common control channel signals onto subcarrier(s) as described by Wallace ('467) because this allows a higher efficiency of channel state reporting/controlling.

Regarding claims 6 and 14, Wallace ('467) described that the downlink subcarriers created by base station for the common control channels (signal) are partially the same subcarriers as the periodically (common) pilot signals (figure 2).

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2. Yukiko ('134) describes downlink method (inherently created by a base station) with segmented time frames/intervals in subcarriers (paragraphs 39-41), selecting k (predetermined number) subcarriers and continuously inserting the common pilot signal into every time frame (drawing 9).

Yukiko ('134) fails to describe a continuously inserted common control channel signal into selected subcarrier(s).

Wallace ('467) exemplifies continuous control channel 1 and BCH channel 2 (common control channels) in an OFDM downlink.

It would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the method of Yukiko ('134) to specify the insertion of the continuous common control channel signals onto subcarrier(s) as described by Wallace ('467) because this allows a higher efficiency of channel state reporting/controlling.

8. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yukiko ('134) in view of Kitade (6,907,014).

Yukiko ('134) describes a continuous (downlink) insertion of common pilot signal (inherently created by a base station) in a selected OFDM subcarrier (drawing 9).

Yukiko ('134) fails to describe a periodic insertion of common control channel signal into selected OFDM subcarriers.

Kitade ('014) describes as a prior art systems (including OFDM) that assigns/insert common control channel signals at (sub)-carrier timeslots (col. 3, lines 16-20, col. 5, lines 19-24).

It would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the method of Yukiko ('134) to specify the insertion of common control channel signals onto subcarriers as Kitade ('014) because this is regarded as a conventional means (from the prior art) of inserting the (required use of) common control channel signals onto an OFDM communication channel.

Allowable Subject Matter

9. Claims 16 and 18 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Warner Wong whose telephone number is 571-272-8197. The examiner can normally be reached on 6:00AM - 3:00PM, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Warner Wong
Examiner
Art Unit 2661

WW



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